# An Imperfect Circle

## Reflections on perception, repetitive processes and fragility in my recent compositional work

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# Table of contents

# Table of figures

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# Copyright Statement

# Abstract

The following thesis and the accompanying portfolio of compositions delve into two recent facets of my compositional investigation: the timbral and dialectical exploration of musical material in a state of instability, and the potential implications of repetitive structures on the perception of time of the listener. By discussing different compositions I outline the way these two features operate in my musical discourse and the way the techniques I developed relate to them. Moreover I address issues regarding the relationship between the objectivity of formal compositional processes and the inner subjectivity of the artwork itself. In this case, the influence of visual artists is particularly important, most notably of Agnes Martin. The manner in which processes and expression are balanced in her work, not only offered many insights on my compositional practice, but helped me to situate my work within a broader artistic context.

# Chapter 1: Context

## 1.1 Process and perception

My main compositional focus is to create contemplative experiences that foster a gradual increase of awareness of the musical material in the listener. In this regard, I am particularly fascinated by the way repetition could potentially foster such an immersive listening state. An interesting example might be the one described by the soprano saxophonist Steve Lacy; while practicing the same minor second interval back and forth for over one hour, he was perceiving the space between the two notes getting larger and larger over time, as he had stated during an informal interview:

> 'I was practicing long notes to develop my tone. I started playing two notes. I was working on the smallest interval, the minor second. In those days I was pretty crazy, really, I could do things for long, long periods of time. So I started rocking back and forth on this minor second, between B and C, and decided to stay on those two notes for a long time. I played them for maybe an hour. [...] it started to get interesting because my perception started changing. So I stayed on those two notes, that little interval for a long, long time, [...] to the point where that little interval had become enormous'.[1]

What fascinates me here is the way Lacy's perception is subjected to a process that heightens his awareness of that minor second over time. In a similar manner, my music attempts to explore various ways in which repetition can inform the listening experience.

From the beginning of my investigation, I started increasingly to incorporate process-oriented *modus operandi* in my compositional practice, in particular concerning my approach to structure. The reason that prompted me to explore the use of processes is the seeking of:

1. A distant and objective view of the musical material.

[1] Jason Weiss, *Steve Lacy: Conversations* (Durham: Duke University Press, 2006), p. 191

2. A direct way to organise musical material in relation to the temporal scale of the piece, both on the macro and micro level.
3. A systematic approach for shaping long musical periods from a limited palette of material.
4. A compositional practice that allows me to visualise the same material from different perspectives.
5. A compositional approach focused on the perceptual consequences of repetition and musical material.

These five points will be extensively addressed in the chapter 3 in which I dwell on the way I dealt with them in each of the compositions within the portfolio.

What particularly interests me is the investigation of the way peculiar properties of repetitive processes can influence the listening experience. In this case, I am concerned exclusively with the objective domain of the experience. According to Helmholtz, the experience is split into two sides: the subjective one, which involves the sensations caused by the object, and the objective one, which engages the perception of the object through cognitive processes.[2] In his article 'Objective and Subjective Sides of Perception', Alan Gilchrist states:

> 'Every perceptual experience has both an objective and a subjective side. [...] The objective side tells me about the world around me, the subjective side tells me about my relationship to the object and about the effect of the stimulus on my body. The objective side concerns the information contained in the energy that reaches my senses; the subjective side concerns the energy itself'.[3]

Although directly manipulating the subjective perception of the listener is beyond the scope of what a composer can do, it is possible to structure the musical material in ways that address the listening experience towards an increasing immersion in the music over time. A pertinent musical example might be *Madrigale* (1979) by Aldo Clementi for four-hand piano and percussions. This composition consists of a continuously repeated fragment that, starting from a considerably fast tempo

[2] Alan Gilchrist, 'Objective and Subjective Sides of Perception', in *Visual Experience: Sensation, Cognition, and Constancy*, ed. by Gary Hatfield and Sarah Allred (Oxford: University Press, 2012) p. 106.
[3] _____ p. 106

gradually decelerates reaching a remarkably slow pace. The gradual decreasing of the same material is a property of the musical object that can be perceived objectively, but nevertheless it has direct and immediate consequences on the experience of the piece. While the listener acquires familiarity with the constantly repeated fragment, the music slows down, promoting the awareness of details that were not perceivable before.

Bryn Harrison takes this approach to perception one stage further; his work deals directly with the way repetition influences the perception of time. In several of his compositions dense and intricate contrapuntal textures gradually reveal themselves through the increasing amount of repetition. In his work *Repetitions in Extended Time* the tempo gradually decreases, while the amount of reiterations increases over time. I find fascinating that both these properties are organised in a way that support the cognitive reception of the listener, functioning as a progressive magnification of the musical material that fosters a gradual increase of immersion in the piece. Describing this approach, Harrison states:

> 'The effect, on one level, could be said to be somewhat like the visual magnification of placing an object under a microscope. At first the repetitions appear indistinct, fleeting and constantly changing, but, as time progresses, figurations become more prominent and obvious and the details themselves begin to take on their own identity'.[4]

In the pieces that I will discuss in the following chapters, I attempt to explore different ways in which compositional processes can to a certain degree shape the listening experience. All of them share a similar approach to repetition, but each of them seeks to draw attention to different aspects and employs different processes and techniques.

[4] Bryn Harrison, 'Scanning the Temporal Surface', *CeReNem Journal*, 3 (2012), p. 62

## 1.2 Temporality and scale

For me, one of the most compelling aspects of repetition in music is the direct impact it can have on the perception of time of the listener. On one hand it seems to suggest a vertical perception of time where 'the past and future do not exist to the perceiver,[5] but instead, there exists a single present stretched into an enormous duration, a potentially infinite "now".[6] Meanwhile, the repetition of musical material fosters expectations and triggers the memory of the listener, involving simultaneously past, present and future. The latter temporal model was firstly described by Edmund Husserl and subsequently by Maurice Merleau-Ponty as the 'unbroken continuity' within the temporal experience.[7] Within this unbroken continuity past, present and future are no longer three separate entities, but rather they coexist simultaneously within our temporal perception through retention and protention. Retention is the trace of the past that perpetuates itself in the present, while protention is the tendency to anticipate the not yet actualised future.[8] To outline the way the unbroken continuity operates, Husserl uses the example of the musical melody :

> 'When a melody sounds, for example, the individual tone does not utterly disappear with the cessation of the stimulus or of the neural movement it excites. When the new tone is sounding, the preceding tone has not disappeared without leaving a trace. If it had, we would be quite incapable of noticing the relations among the successive tones; in each moment we would have a tone, or perhaps an empty pause in the interval between the sounding of two notes, but never the representation of a melody. On the other hand, the abiding of the tone representations in consciousness does not settle the matter. If they were to remain unmodified, then instead of a melody we would have a chord of simultaneous tones, or rather a disharmonious tangle of sound, as if we had struck simultaneously all the notes that had previously sounded'.[9]

[5] Richard Glover, 'Music of Sustained Tones' (doctoral thesis, University of Huddersfield, 2010), p. 30
[6] Jonathan Kramer, The Time of Music (New York, 1988), 55.
[7] Maurice Merleau-Ponty, Phenomenology of Perception (London: Routledge 1962), p. 485.
[8] A detailed examination of retention and protention can be found in Husserl's *On the Phenomenology of the Consciousness of Internal Time,* and in Merleau-Ponty's *Phenomenology of Perception.*
[9] Edmund Husserl, *On the Phenomenology of the Consciousness of Internal Time,* ( Dordrecht: Kluwer, 1991) p. 11

Therefore, it is because of the trace or the felt absence of the past and the sense of the not yet actualised future in the present that we are able to experience a succession of notes as a melody. What struck me is that, with regard to musical repetition, this model seems to operate simultaneously on both a micro and a macro-level of scale. The perception of time on the micro-level focuses on the relation between musical events in proximity or on the nuances of a single musical event whilst the perception on a macro-level draws attention to the way musical events relate to the overall form of the piece and to the trajectory of the composition over time. To stimulate this multi-layered perception of time is one of the main compositional concerns, and it will be extensively addressed in the commentary chapter.
This is also particularly relevant in Morton Feldman's late works, where the sense of retention and the sense of protention of the listener are constantly subjected to a process of expectation/disorientation, on both a micro and a macro-level. Commenting upon Feldman's last work *Piano, Violin, Viola, Cello* (1987) Bryn Harrison states:

> 'Periodically, the order of the piano and string utterances is reversed, or reiterated with slight alterations. Any suggestion of a logical pattern is made redundant by the constant rearrangement of the same materials, which themselves have sometimes been varied. This interplay of the near and exact repetition of single or two bar units promotes both familiarity and confusion, [...] Sometimes short, complete phrases are repeated exactly but, most often, they are left incomplete, so that endings feel like the openings of new phrases and openings feel like endings'.[10]

This balance between familiarity and confusion, fostered by the 'constant rearrangement of the same material'[11] prompts me to question what I already heard and to wonder what is going to happen next, keeping my awareness as a listener in constant focus.

[10]Richard Glover, Bryn Harrison, Jenny Gottschalk, *Being Time : Case Studies in Musical Temporality*, (New York: Bloomsbury Academic & Professional, 2018) p. 14. p. 18
[11] Richard Glover, Bryn Harrison, Jenny Gottschalk, *Being Time : Case Studies in Musical Temporality*, (New York: Bloomsbury Academic & Professional, 2018) p. 14.

Within my own work, I intend to explore different ways in which process-based structures can stimulate the perception of time on both the micro and the macro level. However, while Feldman's acute sense of form and structure is constantly balanced with decisions that seem to largely rely upon intuition, I tend to follow the structural processes I set up more strictly, in a manner closer to Tom Johnson and Richard Glover.

## 1.3 Objectivity and fragility

I have always been fascinated by the way rigorous formal processes can draw to a more distant and objective view of the musical material, and ultimately of the composition itself. This seems particularly true for the work of Tom Johnson, in which in many cases the carrying out of a process, as transparent and objective as it can be, is the artwork itself. In his essay 'I want to find the music, not to compose it' Johnson describes the creative process behind his series *Rational Melodies* (1982):

> 'The Rational Melodies were completely written out, yet there was a relentless logic in each one. After a few bars, the sequence had begun, the rules were clear, and the rest of the piece was inevitable'.[12]

In Johnson's work, retaining the audibility of processes seems a central issue. This perceivability is fostered by the gradual and relentless way in which processes are developed, which often shape the pieces as musical objects that follow an inevitable path. The inevitability of the process surrounds the music with a halo of objectivity that, to some extent, resembles the objective view that is possible to find in the work of visual artists like Donald Judd, Carl Andre, and others, mostly associated with minimalism.

The objectivity of the aforementioned visual artists and composers informed my compositional path in many ways; like in Johnson's case, my compositions tend to deal with structural processes which, once they are set up, run by themselves.

[12] Tom Johnson, 'I Want to Find the Music', essay, undated. See www.editions75.com

However, while in Johnson's work, processes are presented as transparently and straightforward as possible, in my work, they are more opaque. As opposed to Johnson, I tend to seek ways to counterbalance the objectivity and the inevitability of my compositional processes. In this regard, the impact that the visual artist Agnes Martin had on my musical language is central. What struck me about her work is the way the objectivity gained by an extremely sophisticated use of formal processes seems to constitute a point of departure towards an immersive and contemplative form of expression. Before painting her meticulously constructed grids, Martin used to prime the canvas with gesso paint without subsequently smoothing it, in order to make its surface rough and irregular. Subsequently, the lines of the grid, drawn carefully on the uneven surface, will present many micro-irregularities. This approach seems to set a context which fosters the proliferation of small imperfections and irregularities, creating a microcosm of uncontrollable and unpredictable nuances. These nuances are what gives vitality and contemplative power to the painting. As Marion Ackerman stated on Martin's painting *Untitled #5* :

> 'The closer one is to the painting, the clearer the lines of graphite that divide the colour fields. Agnes Martin drew them by hand across the uneven surface of the gesso ground - finely and cautiously. Other irregularities are visible in the particular nature of the paint application. And it is precisely these touches of imperfection that give the work its singular spatial depth and its vitality'.[13]

By involving the interference of contingency, It seems that Martin leaves space to the painting to breathe and to express itself, retaining her own distant and objective view. Therefore, something as impersonal and objective as a grid, through these touches of imperfection, gains its own subjectivity. Martin's *modus operandi* serves as a good analogy to better contextualize the way I work. These thoughts on the inner subjectivity of the artwork itself and its balance with the objectivity of processes are constantly in the center of my compositional enquiry. Not only did Martin's work help me to clarify my artistic standpoints, but it prompted me to explore various ways

[13] Frances Morris, Tiffany Bell, Agnes Martin, *Agnes Martin* ( London: Tate Publishing, 2015. Print.) p. 195

to involve fragility, imperfection, instability, and contingency within my own processes, attempting to let the compositions express their inner subjectivity.

# Chapter 2: Musical language

## 2.1 Fragile sounds

As I discussed in the previous chapter *objectivity and fragility,* one of the main focus of the music I composed over the last year is the investigation of musical material in a fragile state. What particularly interests me about fragility are the nuances in articulation that this state of precariousness fosters. I perceive that, due to their unpredictability and their non-repeatability, these micro-nuances have the potential to enrich the depth of articulation of the piece and to make each reiteration of a sound unique. I find stimulating the contradiction of placing material that highlights its non-repeatability within highly reiterative structures. Within this approach, two dialectical layers operate simultaneously and independently. The formal layer consists of the way the material is structurally organised in the composition while the timbral layer involves the micro-nuances as a form of spontaneous articulation. Although the former is largely dependent on the composer's decision making throughout the writing process, the latter is largely dependent on contingency. However, it is worth considering that while the reiterative organisation of the music draws attention to the micro-nuances through the repetition of the same material, the fragility of the material can in certain cases shroud the clarity of the reiterative structures. Therefore, one of my main preoccupations is to arrange the musical material in a way that balances these two features productively.
In the pieces that I will discuss in the commentary section, I explored the opposition of these two dialectical layers by fostering instability in various ways.
In many cases, I employed musical material that is intrinsically unstable, as the harmonics double stops in *An Imperfect Circle* (*fig.1*) or the airy multiphonics in *An Imperfect Circle 2* (*fig.2*)

**Figure 1:** Harmonic double stop in *An Imperfect Circle* for solo violin.
(*scordatura*: I = E II = G# III = D IV = F#)

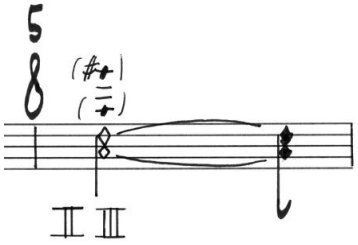
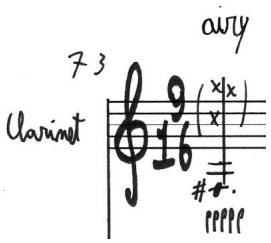
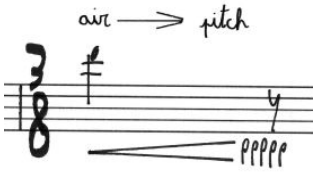


**Figure 2:** Clarinet multiphonics in *An Imperfect Circle 2*.



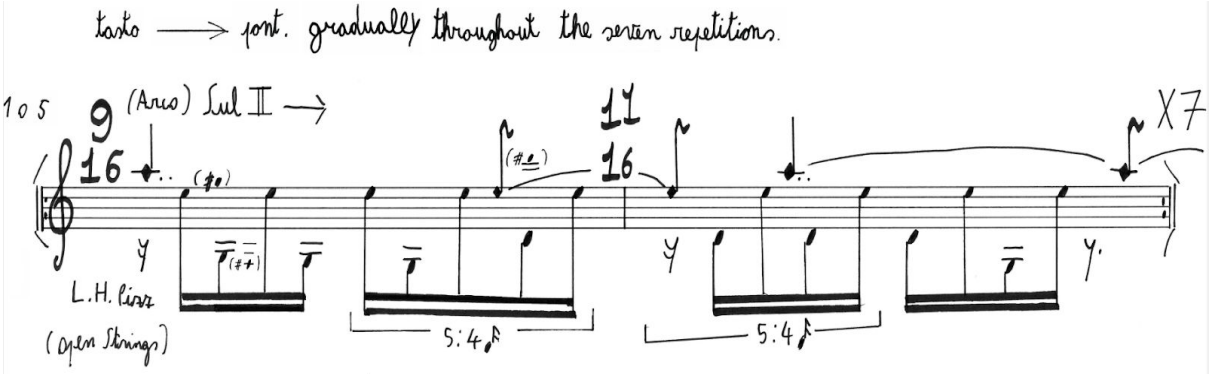

This typology of material, if played at very quiet dynamics, exists in a precarious state at the borders between stability and instability, constantly oscillating between the two in unpredictable ways. In the case of the airy multiphonics, gentle harmonic whispers emerge, often isolating specific partials, often oscillating between them. Within the notation in *fig.2*, the clarinetist has to play a spectral multiphonic with that specific pitch as a fundamental. This state of fragility can be also explored within the delicate transition from one timbral articulation to another. This is also the case for the clarinet part of *An Imperfect Circle 2*, where the clarinetist is often asked to perform a gradual transition from airy to pitched material at very quiet dynamics (*fig.3*).

**Figure 3:** Transition from air sound to pitched sound in the clarinet part of *An Imperfect Circle 2*.



Another approach to promote fragility, is the reiteration of musical situations that are somehow precarious to perform, as in the example below of bowed harmonics and left hand *pizzicato* in the final two bars of *An Imperfect Circle* (*fig.4*).

**Figure 4:** Combination of bowed harmonics and left hand *pizzicato* in the final two bars of *An Imperfect Circle* for solo violin (*scordatura*: I = E II = G# III = D IV = F#).




The performative instability of these two bars fosters different micro-details, aiming to confer a transformative quality to the repetitive nature of the music.
Notational ambiguity can also play an important role in the creation of these precarious musical situations. American composer Evan Johnson developed a complex, multilayered and ambiguous approach to notation, where often notational layers would contradict each other. Regarding notation he stated :

> 'The ideal notation, for me, is not the most 'transparent', [...] I am much more interested in situations where there is an insuperable gap between what the performer sees, experiences, and projects and what the audience receives, because that gap is where the unexpected and spontaneous can occur. My job as a composer is not to narrow that gap as much as I can, [...] but to shape it in productive and (for the performer) thought-provoking ways'.[14]

[14] Evan Johnson and Tim Rutherford-Johnson, online interview,10 for 10: Evan Johnson, 23 January 2010, <https://johnsonsrambler.wordpress.com/2010/01/23/10-for-10-evan-johnson/>

A similar approach to notation combined with a high degree of repetition has the potential to effectively delineate the borders between the difference and repetition on a micro-level, and I intend to explore it more extensively in the future.

## 2.2 Form and trajectory

My most recent musical works, dealing with highly repetitive structures and a limited palette of material, aims to encourage the listener to focus on micro-details and on different relations between elements on a moment-to-moment basis. However, on a macro-level my approach to form focuses on shaping a gradual sense of trajectory and directionality. This sense of trajectory is promoted by progressively altering one or two parameters, or by gradually changing the material throughout the piece ( i.e. a gradual shift in density or in pitch material). My goal is to create a gradual change of the same musical object, which is seen under a shifting point of view. Therefore, the role of trajectory in my music is not a developmental one, but it is rather an attempt to create a gradual sense of forward motion throughout the piece.  A similar parametric metamorphosis can be found in works such as *Logical Harmonies* (2011) and *Imperfect Harmony* (2013) by Richard Glover, *Receiving the Approaching Memory* and *Shifting Light* by Bryn Harrison and *L'Ascenseur* (2010-2012) by Christopher Fox. In all these cases, the directionality of the music on a macro-level and its static quality on a micro-level create a multi-layered-temporality, drawing attention simultaneously on the way the details in proximity relate to each other and the way the music changes on a larger temporal scale.

# Chapter 3: Commentary

The following portfolio of compositions is not presented in chronological order as the different compositional preoccupations that arose in my work do not seem to follow a straight line of enquiry. I rather see my work following a circular trajectory in which all the facets discussed in the previous sections tend to appear, change shape, bring further considerations, disappear and reappear again.

## 3.1: An Imperfect Circle *(November 2018)*

### 3.1.1: Fragility

*An imperfect Circle* for solo violin delves into the relationship between fragility and repetition. However, the writing process started merely as an exploration of natural harmonics within a different *scordatura*. I find stimulating how the tuning can radically alter the spectral qualities of the instrument, especially if the focus is on any material that engages with the way the instrument resonates. This is mostly because the standard tuning of violin, consisting of consecutive fifths, has a very neutral color. On the other hand, alternative scordatura tunings have the potential to bring out more unstable intervals and a darker timbre in the natural resonance of the instrument. The following table illustrates the natural harmonics available in the tuning I finally decided to use:

**Figure 5:** Chart of the natural harmonics available within the *scordatura* used in *An Imperfect Circle.*

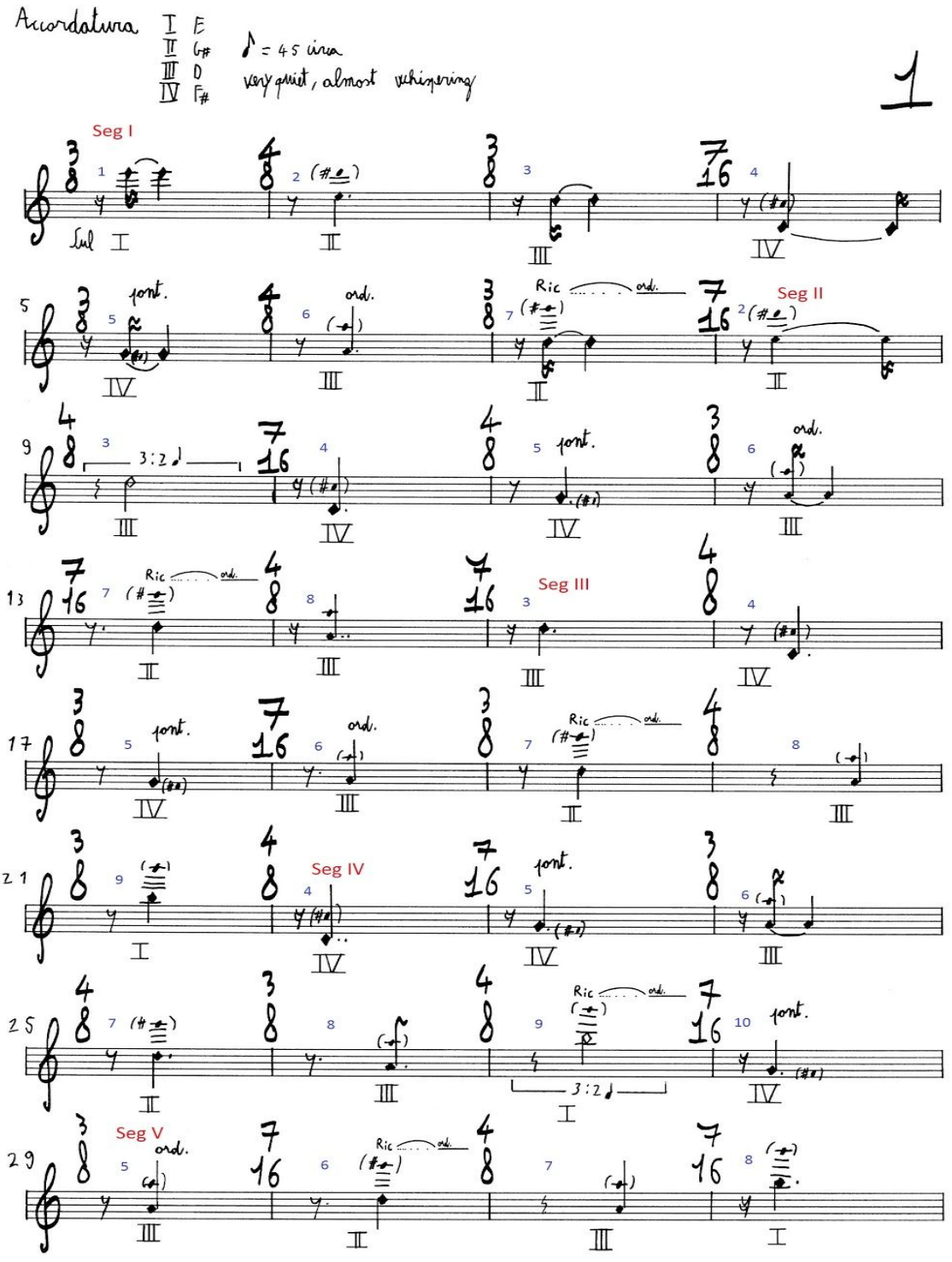
| open strings | 2nd partial | 3rd partial | 4th partial | 5th partial |
|---|---|---|---|---|
| I : E | E | B | E | G# |
| II : G# | G# | D# | G# | C |
| III : D | D | A | D | F# |
| IV : F# | F# | C# | F# | A# |

What interests me about natural harmonics is their state of instability at quiet dynamics and the micro-nuances that this state fosters. As I see it, these small uncontrollable oscillations constitute the major source of vitality of the musical material. I am inclined to see the combination of natural harmonics, very quiet dynamics and *scordatura* as functioning similarly to the priming of the canvas in Agnes Martin's grids, setting the conditions for unpredictable nuances to happen and for sounds to express their inner subjectivity.

### 3.1.2: Structure and perception

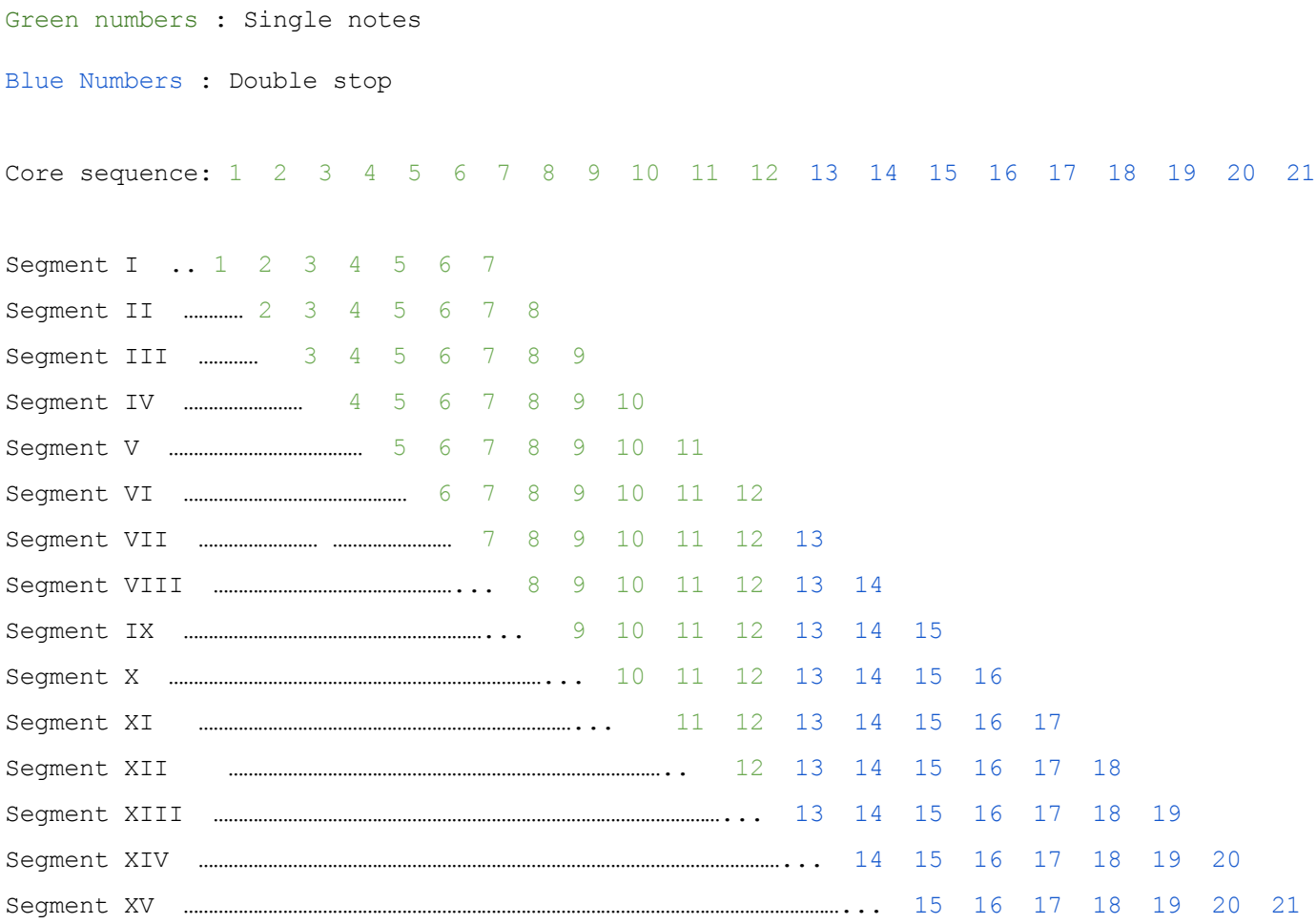
The way I set up *An Imperfect Circle* attempts to underline the differences of these micro-details by repeating each musical event a considerable amount of times throughout the piece**.** On the other, I also aimed to give the piece a sense of trajectory on a macro-level, as opposed to the apparently nondevelopmental pace that is perceived on a micro-level. The structure of the piece is based on a core sequence , which is organised in segments consisting of seven sounds. Each segment starts with the second pitch from the previous. To clarify, if each sound is assigned a number, the structure of the piece will be 1 2 3 4 5 6 7 / 2 3 4 5 6 7 8 / 3 4 5 6 7 8 9 / 4 5 6 7 8 9 10 / and so forth. In the example below (see Fig. 3 below), it is possible to visualise the sequence within the first page of the score. The blue numbers indicate the pitches while the pitch segments are indicated in red.

**Figure 6:** Structural analysis of the first page of *An Imperfect Circle*.


Accordatura
I E
II G#
III D
IV F#
♪ = 45 circa
very quiet, almost whispering
1
Seg I
Seg II
Seg III
Seg IV
Seg V
Sul I
pont.
ord.
Ric
3:2

The following diagram is a graphical representation of the way repetition operates within the material :

**Figure 7:** Graphic representation of the structure of *An Imperfect Circle*.




In the graphic above it is possible to observe the following properties of the structure:

- Each seven-element segment has six elements in common with the previous segment and with the following one. Therefore on a micro-level each element is going to be repeated for a considerable amount of times (in most cases seven times).

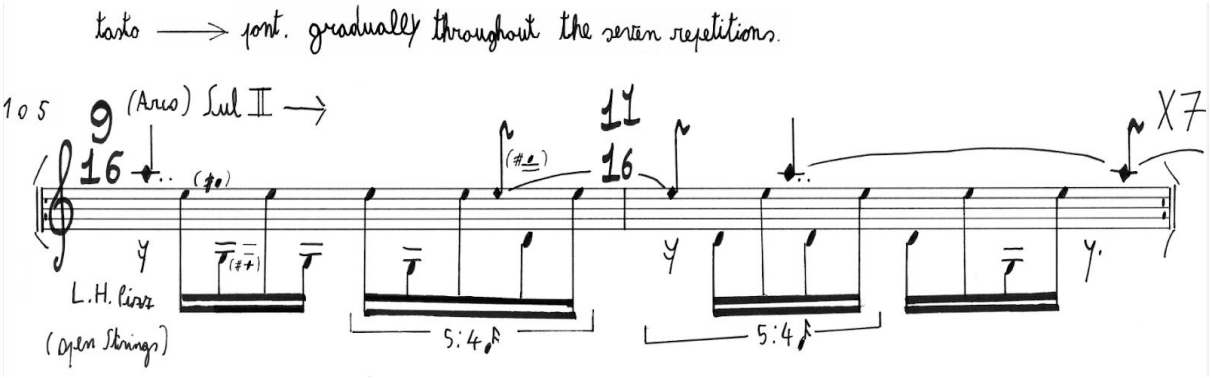
- In each segment a new element is introduced / the first element of each segment will not be present in the following ones.
- The piece gradually regenerates the set of elements involved. For instance, segment I  has six elements in common with segment II, five with segment III, four with segment IV, and so forth. Therefore segment VIII will have no element in common with segment I. My intention here, through this structural property, is to give the piece a sense of proceeding on the macro-level, as opposed to the apparently static pace that is perceivable on a moment-to-moment basis.
- In the core sequence, the first twelve sounds are single notes, and all the following sounds are double stops. Therefore, following this structural procedure of segmentation, double stops are gradually introduced until they constitute the totality of the elements involved. This gradual shift aims to support the trajectory of the piece by creating a sense of opening.

Beside the aforementioned shift from single notes to double stops, another structural tool I adopted in order to support the sense of forward motion in the piece, is to write in each page slightly longer durations than the previous one. Morton Feldman often used the page as a structural container, especially in his late pieces, letting his decision be informed by how the material was placed within the page. Similarly, I decided to assign a set of three time signatures to each page, and to increase their value of one semiquaver every time I began a new page. However, even if I perceive that this slight stretch of the time signatures affected the music in many ways, it is hardly noticeable while listening. Other composers have used the gradual decreasing of the pace of the music in a more substantial way, in order to amplify the perception of the musical material, most notably Aldo Clementi and Bryn Harrison. Here the main function of the stretching of the bars, beside supporting the trajectory of the piece, is to give double stops enough time to reveal their fragility. All these structural properties are not merely oriented to formally shape the composition, but rather to stimulate the perception of time at different layers; on a micro level, where the attention of the listener is drawn to details on a moment-to-moment basis and on a macro level, where the focus is on the trajectory of the piece on a larger scale.

### 3.1.3: Coda

In the last two bars of *An imperfect Circle* (see fig.4b below) a new musical situation is introduced and repeated for seven times.

**Figure 4b:** Final two bars of *An Imperfect Circle* for solo violin (*scordatura*: I = E II = G# III = D IV = F#).




By introducing a new musical situation near the end of the piece, my goal is to leave the listener questioning what he/she just heard after the performance. As a listener I experienced that sensation many times while attending concerts of improvised music, where often, because of the nature of the practice, unexpected endings occur before the musical material has the time to be developed. I was greatly influenced by the way these endings created a sense of disorientation that perpetuated a proactive immersion within the musical experience until long after the music ended.

## 3.2: An Imperfect Circle 2 *(April 2019)*

### 3.2.1: Structure

In *An Imperfect Circle 2* , for clarinet, piano, violin and cello, I attempted to take the same segmentational approach to structure of *An Imperfect Circle* a stage further. The initial aim of the piece was to investigate how an analogous process of segmentation could be employed with a contrapuntal approach within an ensemble context. One of the possibilities of using this technique with more instruments is that segmentations

of different length operating at the same time can be synchronised and desynchronised. Therefore, at the very early stage of writing, I decided to organise each part in segments of different lengths. The following diagram provides a numerical representation of the structure of the beginning of the piece, in which it is possible to visualise how the material was segmented.

**Figure 8:** Numerical representation of the structure of the beginning of *An Imperfect Circle 2.*

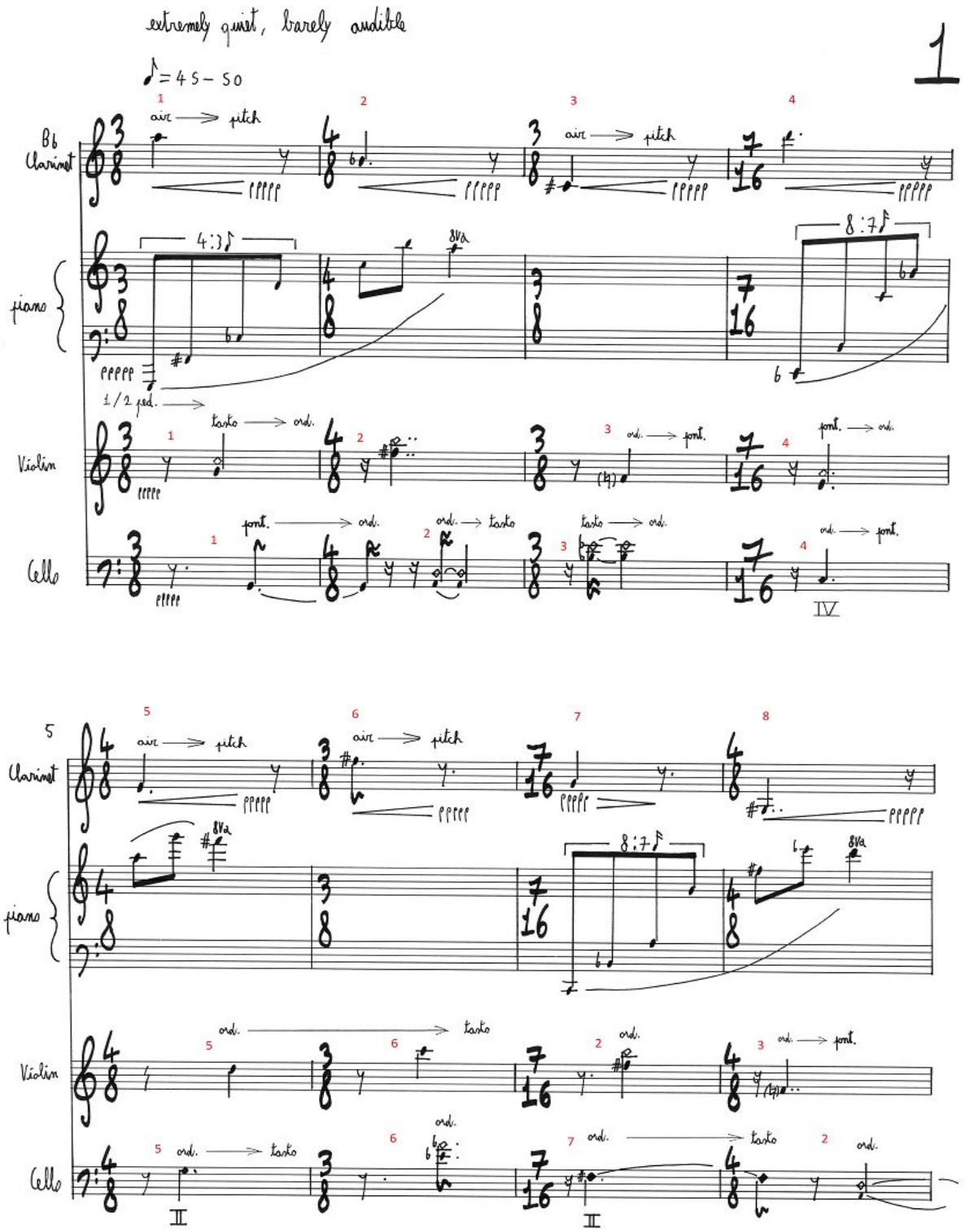
```
Clarinet : 8-sounds segments
Violin : 6-sounds segments
Cello : 7-sounds segments
Piano : The piano part consists of a cycle of seven two-bars
patterns which are always repeated in the same order.


Cl :  1  2  3  4  5  6  7  8/ 2  3  4  5  6  7  8  9/ 3  4  5  6
Vln : 1  2  3  4  5  6/ 2  3  4  5  6  7/ 3  4  5  6  7  8/ 4  5
Cel : 1  2  3  4  5  6  7/ 2  3  4  5  6  7  8/ 3  4  5  6  7  8
Pno : 1        2        3        4           5        6        7/

Cl :  7  8  9  10/ 4  5  6  7  8  9  10  11/ 5  6  7  8  9  10  11
Vln : 6  7  8  9/  5  6  7  8  9  10/ 6  7   8  9  10 11/7  8   9
Cel : 9/ 4  5  6   7  8  9  10/5  6   7  8   9  10 11/6  7  8   9
Pno :       1     2           3        4      5        6      7
```

The following example outlines the structure within the first page of the piece.

**Figure 9:** Structural analysis of the first page of *An Imperfect Circle 2*.




What interests me about this structure is that it acts as a multi-cyclical mechanism in which the same elements keep returning in different combinations. In the

previous graphic (*figure 9*) it is possible to observe the way in which the material behaves reiteratively within single parts, while identical combinations between parts never recur. As in *An Imperfect Circle,* here in each part except for the piano one, the material supports a sense of trajectory following the same scheme of gradual introduction of a different typology of material. In the clarinet part for instance, the first segments consist mainly of long notes and air sounds; as the piece proceeds, the number of air sounds decreases and multiphonics are gradually introduced.

**3.2.2: Stability and verbal notation**

In this case, the state of precarious stability does not emerge merely from the intrinsic nature of the musical material, but it is also fostered by the verbal notation. Evan Johnson, in his recent orchestral piece *Measurement as Contrition: Three Canon* (2018), often uses dynamic indications in a manner that indirectly projects the musicians into an intersubjective state of perception. For instance, when a *tutti* chord recurs a few times in the piece, his dynamic indication is *il tutto quasi inaudibile* which translated to English would be " The whole sound of the orchestra almost inaudible". This use of verbal notation draws attention to the sound of the whole orchestra, rather than single parts. This dynamics instruction, if taken literally, does not ask the player to play almost inaudibly, but to be, as the whole orchestra, almost inaudible. Therefore, each player is prompted to listen to the whole orchestra as himself, rather than himself as part of the orchestra. The sonic consequence is a very distant mass of sound from which all sorts of unexpected timbral nuances emerge. I find it particularly fascinating how an intersubjective means of relating to other players, on one hand projects the musicians into a more open state of perception, and on the other, it pushes them beyond their limits.

In the case of *An Imperfect Circle 2,* the dynamic indications act similarly, fostering both fragility and intersubjectivity. As the quietest materials in the piece are the air sounds of the clarinet, I decided to use them as a point of reference to structure the dynamic indications for the other instruments. All the other musicians are asked to play as soft as the air sounds. Such quiet dynamics are in fact hardly achievable. The general performance instructions state:

> " You should almost attempt to not be heard by the audience. Give priority to the quietness rather than the stability of sound. Accept with joy any imperfection, fragility or instability caused by the attempt of performing such quiet dynamics level".[15]

I am fascinated by the idea of the act of performing as an intimate and secretive ritual among musicians where the audience is almost an intruder. What I am trying to suggest here, is an approach to performance that does not project directly the music towards the audience, but prompts the listener to project himself/herself towards the music.

The clarinet part is the only case here in which the state of precarious stability does not arise from the verbal indications, but rather is already present in the nature of the material itself. The whole palette of material is shaped by two distinct articulations: a gradual shifting from *niente* to *ppppp*, and a gradual shifting from air sounds to pitched notes. These two articulations are applied to both single notes and multiphonics. While the former tends to blend with the strings, the latter fosters more timbral contingents. Regarding the way to approach this articulation, I wrote in the performance notes:

> "Starting from air sound, gradually allow the reed to vibrate, and to bring out the pitch".[16]

Within this transition from a state of instability towards a more stable one, the way in which the reed vibrates is very unpredictable, as it tends to oscillate between pitched sound and air sound. This is particularly evident in the case of spectral multiphonics, in which it is possible to perceive the emergence of different partials. In the performance instructions, I deliberately chose the verb 'to allow' as it implies a more resilient approach to uncontrolled vibrations of the reed.

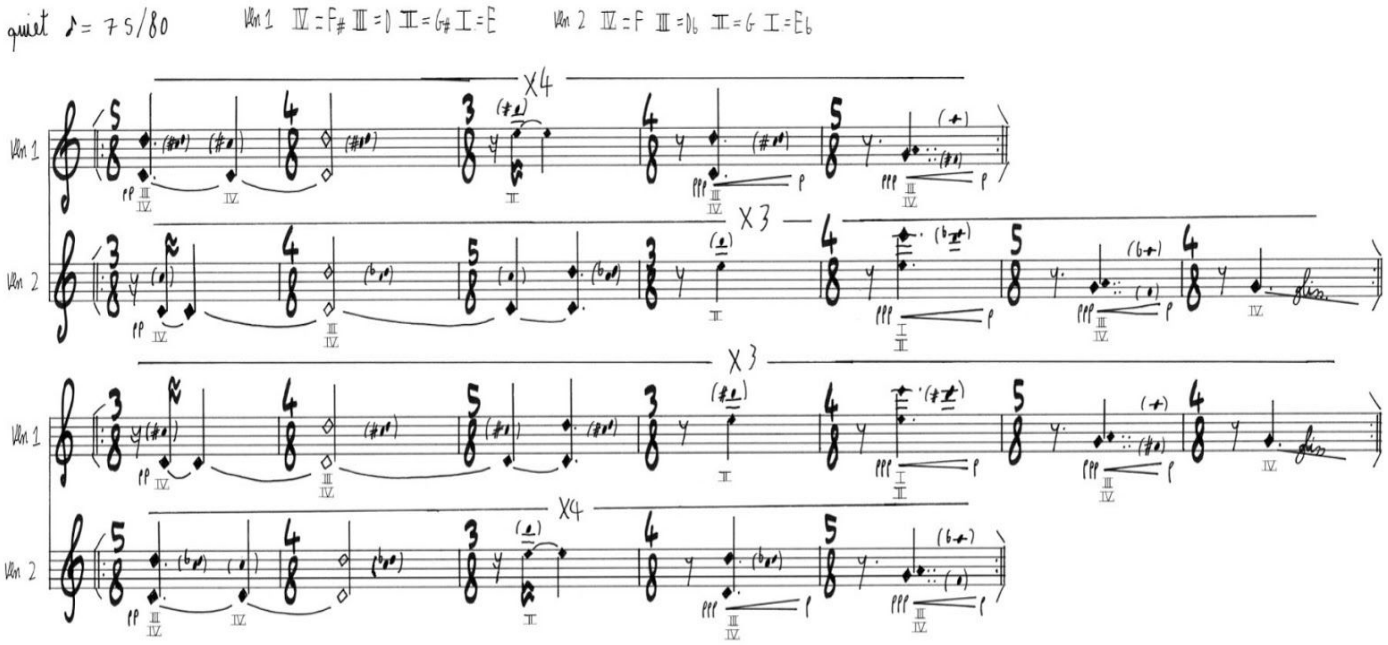
[15] Lucio Tasca, unpublished score of *An Imperfect Circle 2*, (2019)

[16]

## 3.3 Two Violins *(March 2019)*

The same idea of a multi-cyclical mechanism in which the same elements return in different combinations is also at the core of *Two Violins*. However, in this case the form and the structure of the composition are considerably different from *An Imperfect Circle 2*. The two parts are organised in loops of different lengths which relate to a specific ratio (i.e. 4:3, 5:4, 7:5, etc...). The following figure shows the first two systems of the score:

**Figure 10:** First two systems of *Two Violins*.




The musical material of the two parts is very self-similar; however, as the combination of sounds between the two parts is constantly shifting, within this circular mechanism the material is constantly recontextualised. Similar structures have been used by composers such as Morton Feldman in *For Philip Guston* (1984) and *Bass Clarinet and Percussion* (1981), and Bryn Harrison in *Repetitions in Extended Time* (2008) and *Receiving the Approaching Memory* (2014). Also in Carnatic music, structures that create temporary desynchronisation through specific ratios have largely been

used for centuries.[17] The piece shares very similar material with my piece *An Imperfect Circle* (natural harmonics in the same *scordatura*). In this case the two violins are tuned a minor second apart from each other (Violin 1: I = E II = G# III = D IV = F# / Violin 2: I = Eb II = G III = Db IV = F). In fig.11( see pag. 23) it is possible to notice that the material and the structure of the two parts of the first system is presented in the second one, but reversed; violin 1 plays in the first system what violin 2 plays in the second system and vice versa. With this inversion of the parts, my aim is to alter the perspective of the details, as the details previously heard in part 1 are transposed a minor second down and the details previously heard in part 2 are transposed a minor second up.

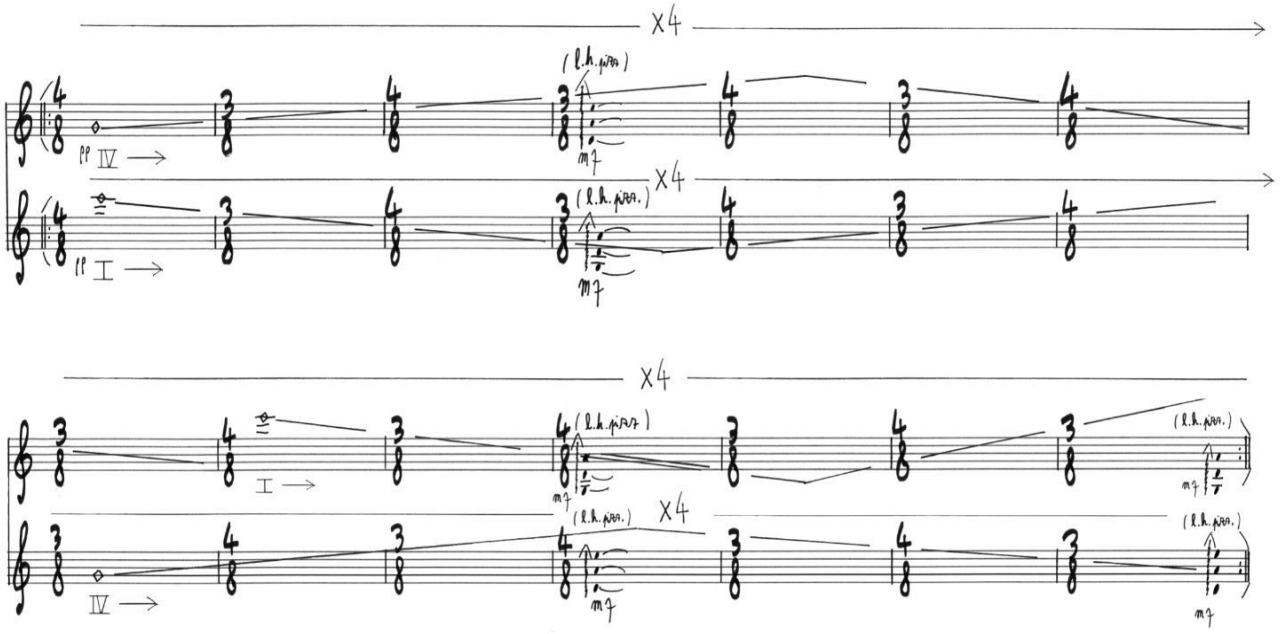
In this piece I perceive that, the fragility of the material could easily shroud the clarity of single musical events, making the music collapse into indefiniteness. I attempted to overcome this issue by using different articulations throughout the piece (i.e. glissandos, crescendos; my goal here is to foster the emergence of a variety of different details from the overall surface). The set of instructions for the bowing positions also play an important role in this regard. Throughout the total amount of reiterations of one line, each player has to shift gradually from one bowing position to another (e.g. from *sul ponticello* to *ordinario*). Performers are free to choose their own bowing trajectory and are encouraged to act independently in respect to their colleague in this regard. My aim here is to subject the piece to a gradual shift of perspective from a timbral point of view.

Unlike the pieces discussed before, this composition does not present a directional trajectory on the macro-level, as the way the material changes throughout is not oriented into a specific process of transformation. However the piece retains its consequentiality through the self-similarity of the musical material throughout.

In the last page of *Two Violins,* a new musical situation is introduced (figure 12). Both violins here play a very slow harmonic glissando up and down one string. The timbral field created by the glissando lines is occasionally combined with a left hand *pizzicato* chord played by both violins.

[17] A detailed examination of the use of this kind of structures in Carnatic music can be found in Rafael Reina, *Applying Karnatic Rhythmical Techniques to Western Music*, (London: Routledge: 2016)

**Figure 11:** Last page of *Two Violins.*




When listening, I perceive that my focus here suddenly shifts towards the static quality of one timbral field, rather than on the dialectic created by the constantly changing combinations of elements, suggesting what Jonathan Kramer defined as 'vertical perception of time'.[18]

## 3.4: Breaking a Circle, Feeding Another *(October 2018)*

### 3.4.1 'Cut into the timeless noise'

*Breaking a Circle, Feeding Another* for piano solo is an endeavour to trigger in the listener an active listening of the silence in between musical events. The idea of the piece came after reading an interview of the Dutch composer Antoine Beuger in which he discusses his notion of music as "cut into the timeless noise, which consists in everything that sounds".[19] This statement to me suggests a compositional approach that considers what is traditionally defined as the sound of the surrounding environment as main musical material. Therefore, each sound played by musicians

[18] Kramer, Jonathan, The Time of Music (New York, 1988), p.55
[19]James Saunders, *The Ashgate Research Companion to Experimental Music* edited (Farnham: Ashgate, 2009), pp. 231–241

has the mere role of making us perceive the space between sounds under a different perspective. Describing the approach used in his series of compositions *Tout a Fait Solitaire* (1998), Beuger states:

> 'The player is basically sitting in silence, very rarely playing one single very soft, rather short sound. Somewhere between 10 and 40 minutes into the piece the sound stops appearing. Silence remains. The piece ends somewhere between 60 and 90 minutes after it started. This piece is revealing something about disappearance. The way the sound appears (very rarely, very soft, rather short) is already very much a form of disappearing: the moment it is there, it is already gone. Then, at some point, it has disappeared altogether and doesn't return. What remains is what was already there: silence, but now without the rare occurrence of the sound. A silence coloured as it were by the absence of the sound: the sound has gone, isn't there anymore. The concept, or better the experience of 'not anymore' as the strongest possibility for us to relate to emptiness or the void has been the focus of my attention for many years'. [20]

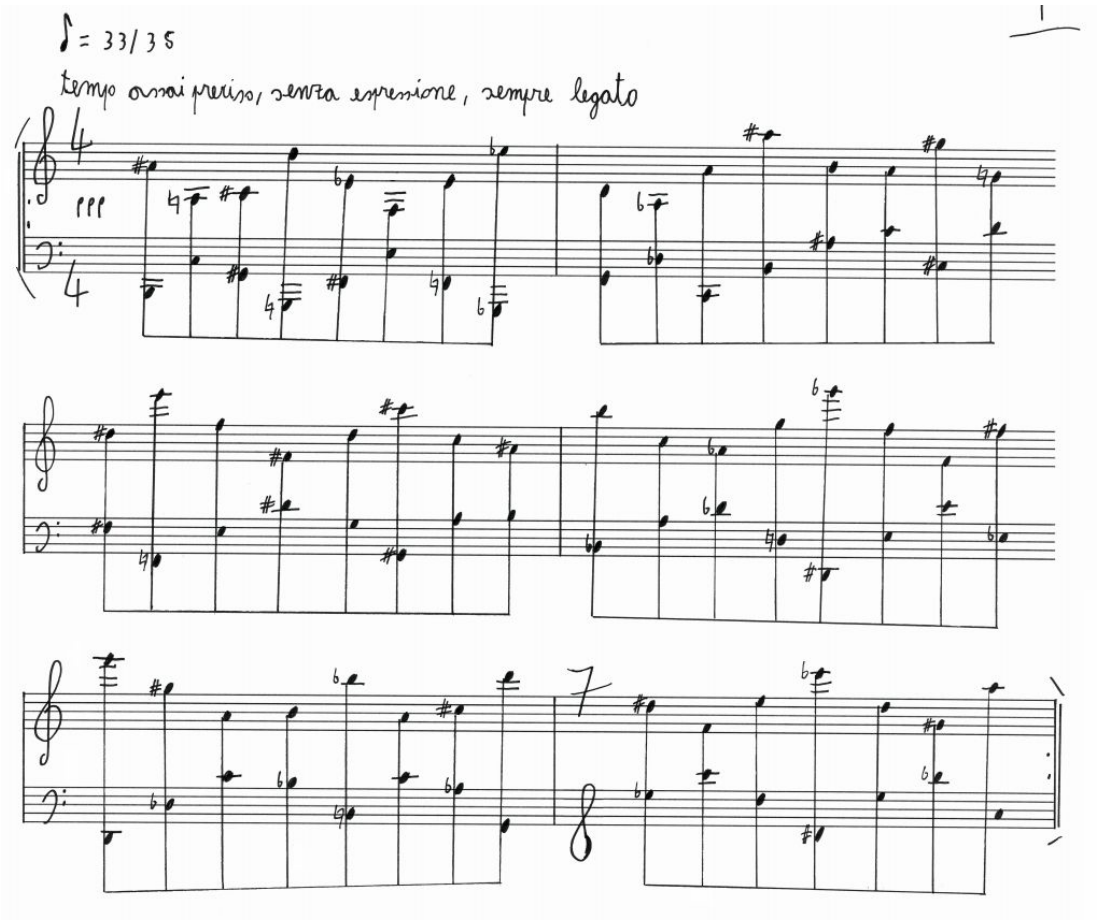
I find stimulating this idea of colouring the silence with the disappearance of sound, and the way it could underline perceptually what Merleau-Ponty described as a "past that is present to us only through the determinate void that it leaves in us".[21] My aim here is to explore this approach by gradually magnifying the perception of the void as the main musical material.

As starting point, I took a cycle of dyads played in a very slow even pulse with no rest in between (see fig. 1 below).

**Figure 12:** First cycle of *Breaking a Circle, Feeding Another*.

[20]

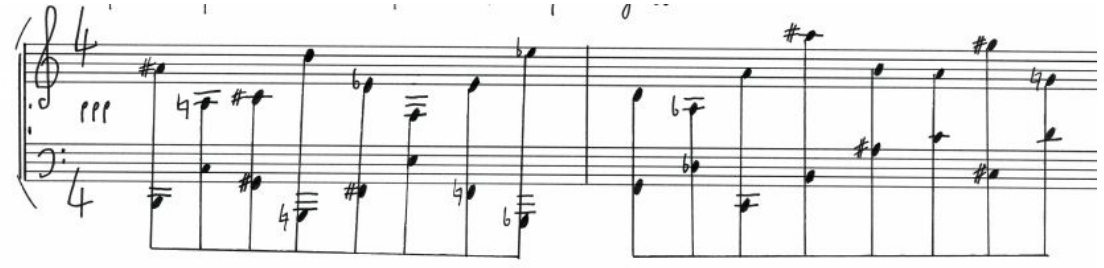
[21] Maurice Merleau-Ponty, *Themes from the Lectures at the Collège de France, 1952–1960.* (Evanston, IL: Northwestern University Press, 1970) p. 50-51



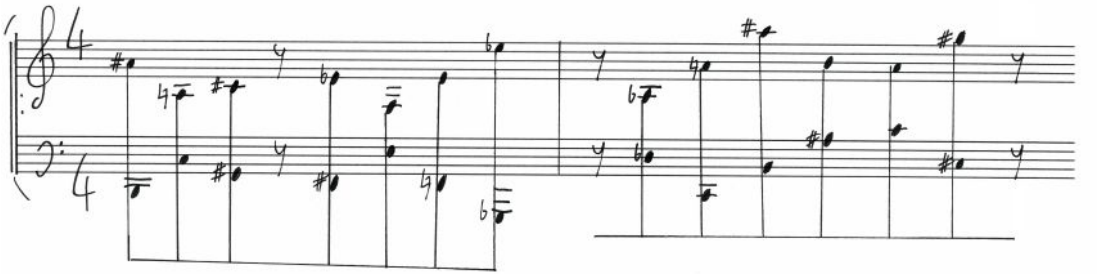

Each time the cycle repeats, I replaced few dyads with rests, until only two dyads are left among forty-five rests. In the following example it is possible to visualise how this approach operates within the first two bars of the first six cycles:

**Figure 13:** Progressive replacement of dyads with rests in the first two bar of each cycle in *Breaking a Circle, Feeding Another*.

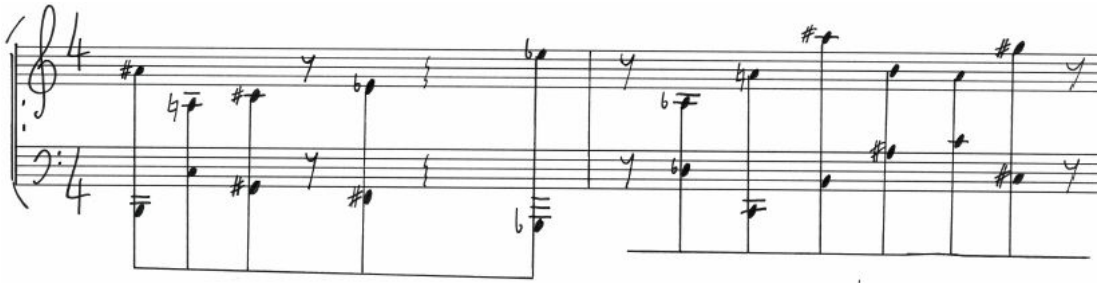
Cycle 1



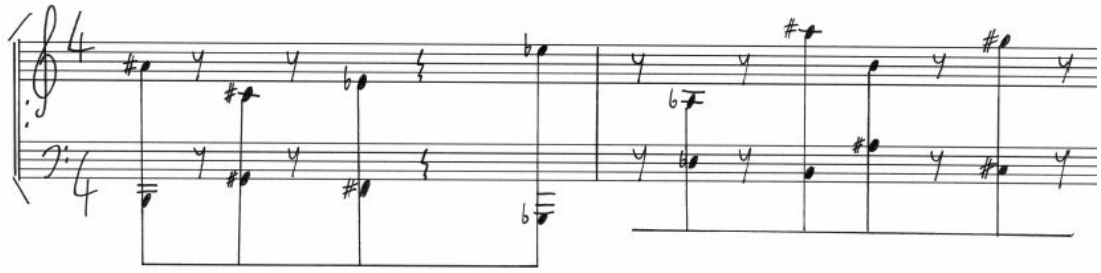
Cycle 2



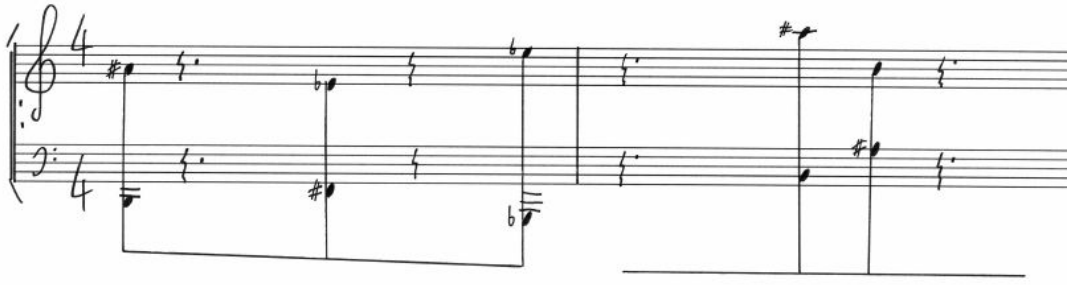
Cycle 3



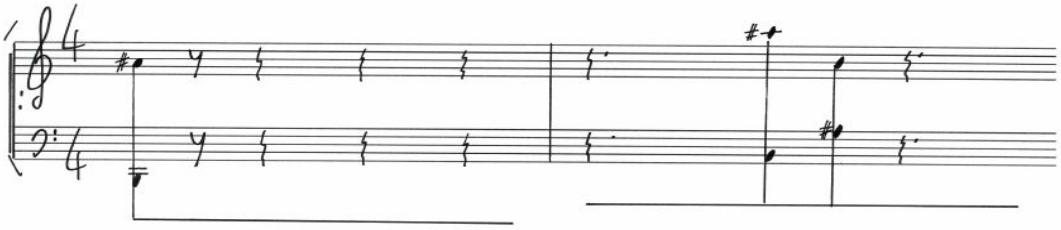
Cycle 4



Cycle 5



Cycle 6



By moving gradually between these two extremes, my aim is to draw attention to the progressive expansion of the temporal space between each musical event. As the silence increasingly takes place, the impact that each musical event has on the acoustic environment, gradually increases. Therefore, the listener is progressively led to perceive each element as single gesture that floats into silence, rather than as part of the horizontal mechanism of a cycle. In this case, I am particularly drawn to the idea of gesture as a tool to help perceive the unity of subject/object, past/present/future that is inherent in many forms of Zen art (e.g. the art of drawing *ensō* the japanese circle).[22] This implies that there should not be any separation in the experience and absence of sound. On the contrary, their unity and their consequentiality should be perceived organically as 'the flowing of present to past in the experience of the subject'[23], in which 'the past is "in" the present as retention—as the sense of absence, of pastness—and the present is "in" the past as protention—as the sense of a not-yet'.[24]

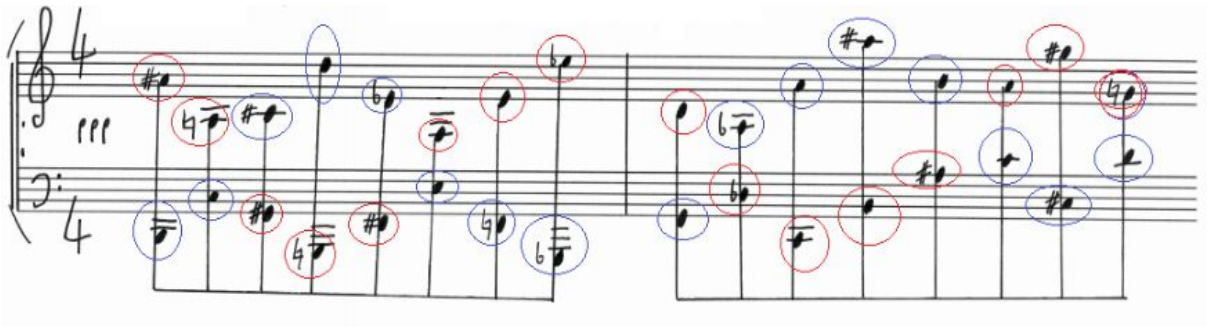
### 3.4.2 Pitch Organisation

The aforementioned cycle of dyads that serve as a basis for the whole composition consists of the overlapping of two chromatic lines in contrary motion. The two lines are continuously subjected to octave transposition. This idea was inspired by Bryn Harrison's composition *Vessels* (2012) where the same approach to pitch organization

[22] A detailed examination on the art of painting *ensō* can be found in Audrey Yoshiko Seo's book *Ensō: Zen Circles of Enlightenment*
[23] Jessica Wiskus, 'From the Body to the Melody: "Relearning" the Experience of Time in the Later Merleau Ponty', *Avant: Journal of Philosophical-Interdisciplinary Vanguard*, 2018, p.136
[24] Jessica Wiskus, 'From the Body to the Melody: "Relearning" the Experience of Time in the Later Merleau Ponty', *Avant: Journal of Philosophical-Interdisciplinary Vanguard*, 2018, p.136

can be found presented in a much less straightforward manner. In the figure below (*fig.13*) it is possible to observe how the two lines are displaced within the first line of the piece. The red circled notes belong to the descending chromatic motion, while the blue ones to the ascending one.

**Figure 14:** Pitch analysis of the first two bars of *Breaking a Circle, Feeding Another*.



A particular property of this cycle is that the pitch sequence contains only six dyads ( including their inversions) which create a palindromic structure. To clarify, if each dyad is assigned a number, the numerical representation of the cycle will be : 1 2 3 4 5 6 6 5 4 3 2 1 1 2 3 4 5 6 6 5 4 3 2 1 and so forth. The following diagram serves as an illustration of the aforementioned property. Each color corresponds to a dyad.

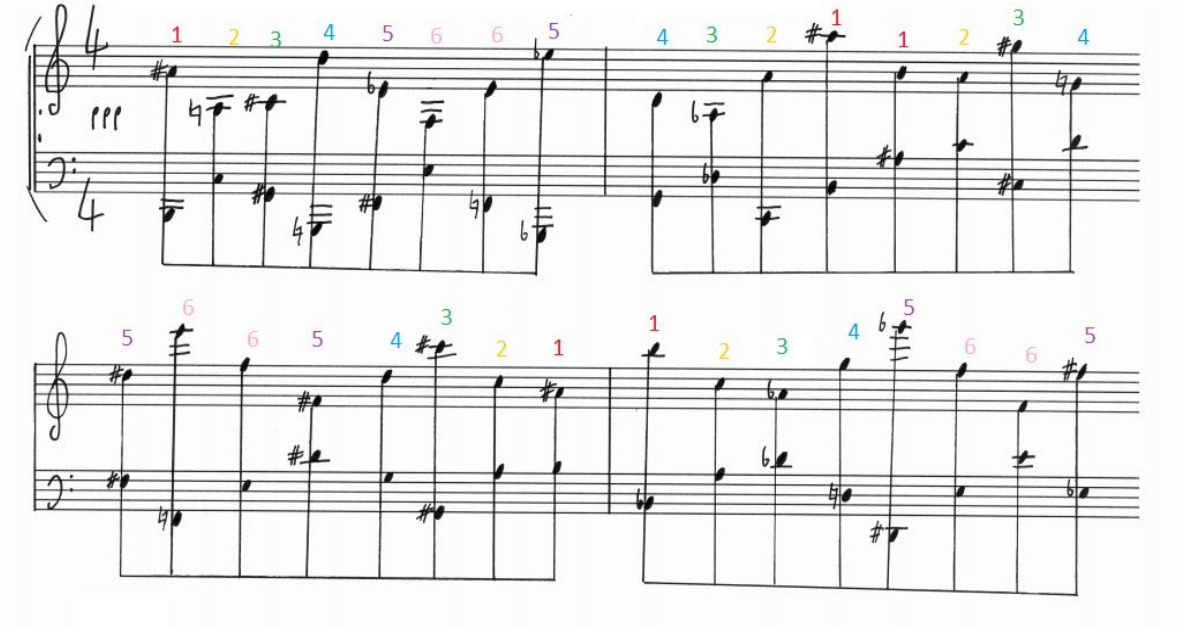
**Figure 15** Graphic representation of the pitch organisation of *Breaking a Circle, Feeding Another*.

```
Dyad 1 = B, A#
Dyad 2 = A, C
Dyad 3 = Ab, C#
Dyad 4 = G, D
Dyad 5 = Gb, D#
Dyad 6 = F, E

Dyad : 1   2   3   4   5   6  6   5   4   3   2   1
Line 1 : B   C   C#  D   D#  E  F   F#  G   G#  A   A# :
Line 2 : Bb  A   Ab  G   Gb  F  E   Eb  D   Db  C   B  :
```

In the figure below it is possible to observe this property within a score extract:

**Figure 16:** Pitch analysis of the first two systems of *Breaking a Circle, Feeding Another.*



In order to preserve this palindromic symmetry throughout the whole piece, I decided to replace one entire category of dyads with rest each time the cycle recurred. For instance, in the first repetition of the cycle, all the dyads consisting of the pitches e and f ( dyad 6 in the graphic above) are replaced by a rest. Consequently the core sequence *1 2 3 4 5 6 6 5 4 3 2 1* becomes *1 2 3 4 5 rest rest 5 4 3 2 1.* The same process is subsequently repeated by replacing dyad *4, 2, 3* and 5 until only dyad *1* remains. In *fig.12 it* is possible to observe the palindromic structure within the first twelve quavers of each cycle. However, by replacing the dyads by category, my aim is not merely to preserve the palindromic structure, but to confer to each cycle a slightly distinct character. This effect acts on a macro-level as a gradual shifting in color gradation, that, simultaneously with the progressive expansion of the silence, supports the sense of trajectory of the piece.

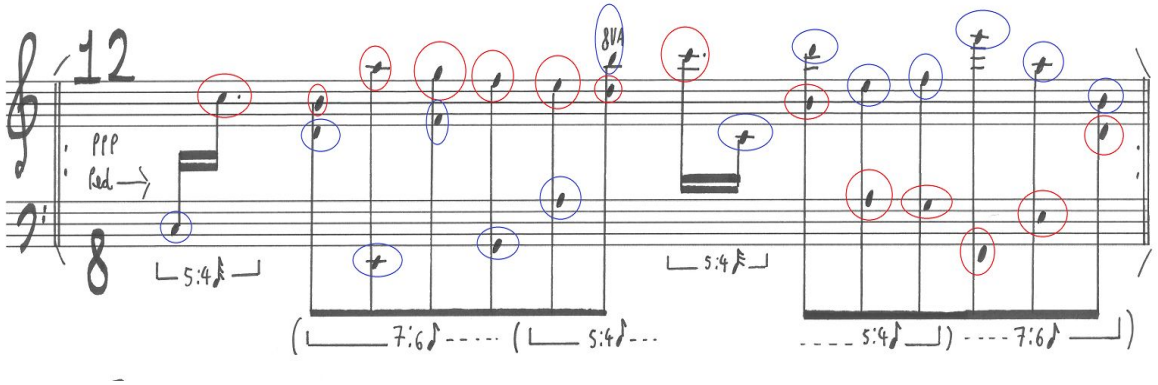
# 3.5: One Year Timelapse *(January 2019)*

## 3.5.1: Pitch organisation

My most recent piano solo piece *One Year Timelapse* consists of a gradually changing musical object. It is inspired by Richard Glover's piano piece *Logical Harmonies,* and it retains the same structural trajectory. In *Logical Harmonies* a major triad is assigned to each hand, and they run over the circle of fourths. Each time the circle of fourths is completed, the relation between one of the two triads is augmented by one step from the circle of fourths. To clarify, in the first circle the two triads are C/C, F/F, Bb/Bb, and so forth. In the second circle C/F, F/Bb, Bb/Eb, and so forth. In the third one C/Bb, F/Eb, Bb/Ab, and so forth. *One Year Time-lapse* works exactly in the same way on a macro-level, although the way the material is constructed is remarkably different.

As in *Breaking a Circle, Feeding Another*, a cycle is constructed by overlapping two lines in contrary motion, in this case both voices follow a C major scale. The following example shows how the two voices are placed within the cycle. The red circles indicate the descending line, while the blue circles indicate the ascending line.

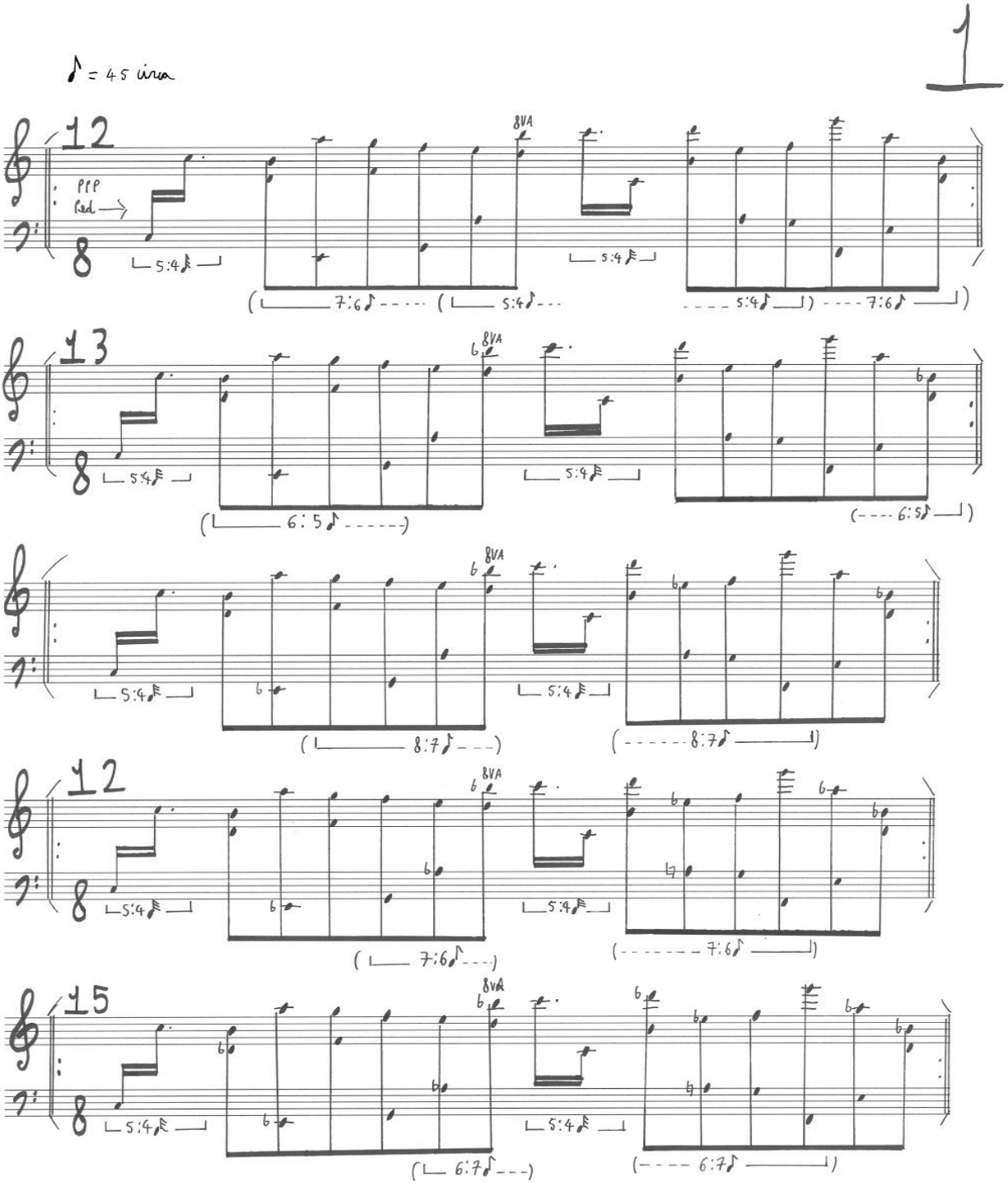
**Figure 17:** Pitch analysis of the first bar of *One Year Time-lapse*.




Subsequently in each cycle, the alterations of the ascending line shift to the key a fourth above, while the descending ones stays constantly in C. For instance in the second cycle, all of the B pitches of the ascending line become Bb, in the third line

all of the B and E pitches of the ascending line become Bb and Eb, and so forth. The following figure shows the way the piece proceeds within the first page of the score :

**Figure 18:** First page of *One Year Time-lapse.*



While the first cycle is completely diatonic, the following cycles acquire increasingly polytonal traits, as in each new cycle the two lines have less notes in common. This effect acts similarly to a progressive shift in color gradation from a bright palette to a darker one.
From half of the piece, when the two lines reached the further points in the circle of fourths ( C major and Gb tonalities), I decided to alter the descending line (this time following the circle of fifths), instead of the ascending one**.** The following chart is a representation of the way the shift of tonality operates within the structure of the whole piece:

**Figure 29:** Tonality trajectory of the two lines throughout the structure of *One Year Time-lapse.*

A.L. = Ascending line

D.L = Descending line

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A.L. | C | F | Bb | Eb | Ab | Db | Gb | Gb | Gb | Gb | Gb | Gb |
| D.L. | C | C | C | C | C | C | C | G | D | A | E | B | F# |

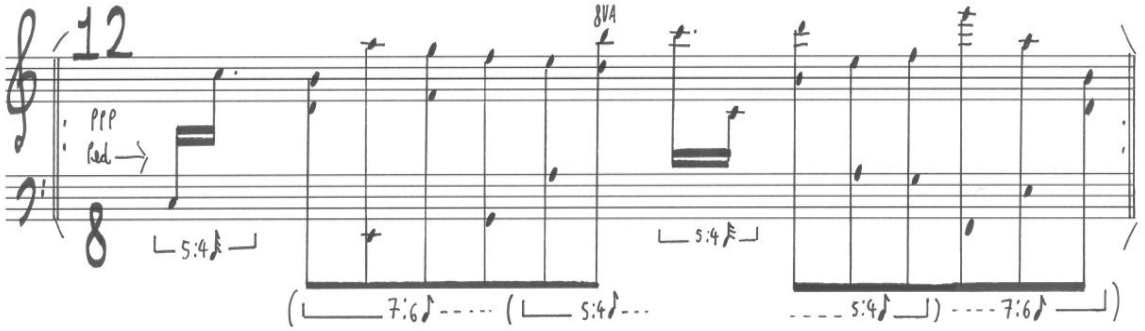
This intervention that detours the inevitability of the gradual process aims to make perceivable on a macro-level both a circular trajectory and a horizontal one. The circular one is perceivable through the color gradation of the piece, and upon reaching its darkest point, gradually returns to a completely diatonic pitch palette. On the other hand, because of the aforementioned intervention, the piece does not return to the point of origin, but heads towards a different diatonic cycle.

### 3.5.2 Rhythm and notation

One aspect related to instability that I attempted to stress here, is the human inability to accurately perform extremely slow even pulses. I am fascinated by the aesthetic contribution that highlighting human imprecision at such slow pulses can bring to the music.

I started already to experiment with this approach in *Breaking a Circle, Feeding Another* by setting up the whole composition in an even pulse at 33-35 bpm, although the performer could arguably count the inner subdivision in order to overcome human imprecision. In *One Year Time-lapse* I tried to take this idea one stage further by setting up small fragments of even pulses at different speeds. In the following figure it is possible to visualise how these fragments are placed within the first two bars of the score:

**Figure 20:** First bar of *One Year Time-Lapse.*




Within this notation the polyrhythms are split into smaller fragments. For instance the seven quavers to be performed at 7:6 speed are not all in proximity; four of them are placed near the beginning of the bar and the other three at the end of the bar. To clarify, the 12/8 bar above has to be performed rhythmically as follows:

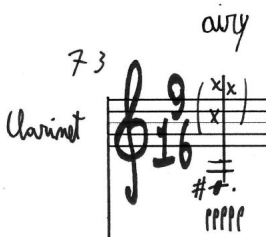
- five demisemiquavers in the space of four
- four quavers at 7:6 speed
- two quavers at 5:4 speed
- five demisemiquavers in the space of four
- three quavers at 5:4 speed
- three quavers at 7:6 speed

As these fragments are quite short, the *tempo* quite slow (quavers = 45 bpm), and the various speeds of the fragments extremely close to each other, the stabilisation of pulses is not promoted, but it is rather in a precarious state. Unlike the pitch palette, the development of the rhythm throughout the piece does not follow a gradual process, but it largely relies on intuition and self-similarity.

# Chapter 4: Further considerations

The research I carried out during this year helped me to develop a compositional approach that looks at musical material through the lens of its potential consequence on the listening experience. However, I envisage that the outcomes of this research can be further explored in many ways. At the moment, my main compositional concern is to find the right balance between the instability and clarity of each musical element. The fragile state of the musical material should not completely overshadow the perceivability of the transformative relationships between elements. On the contrary, by employing fragile musical material my goal is to make each repetition of a musical event unique, enriching the depth of the piece.
I am also taking into consideration to explore a compositional approach that focuses only on the dialectical potential of fragility, which until now I exclusively investigated in relation to repetition and structural organisation. Examining musical fragility in a different context has the potential to expand upon my compositional language and unfold new areas of research.
Furthermore, I am considering to explore these repetitive structures with an indeterminate use of material. The main stimulus in following this path is to investigate to which degree the structural approach that I previously employed retains its formal characteristics (e.g the sense of trajectory, the transforming relationships between elements) if the musical material is not wholly determined. It is already possible to find a trace of this approach in the clarinet part of my piece *An Imperfect Circle 2*, where multiphonics are specified only in their lowest note (fig. 2b).

**Figure 2b:** Clarinet multiphonics in *An Imperfect Circle 2*.



Until now I did not explore extensive use of indeterminate material and I hope to delve more into it in the future.
A striking example of the possibility of an indeterminate use of multiphonics is Scott McLaughlin's piece *there are neither wholes nor parts 2*, for clarinet or sax. In the abstract of the score McLaughlin writes:

> '*There are neither whole nor parts* is an open score piece for multiphonics. There are no pitches/rhythm/fingerings specified, the quasi-graphic notation describes specific contours and envelopes for which the player must find an appropriate multiphonic according to the principle of the piece'. [25]

However, many details are meticulously specified, such as the amount of time that each event has to be repeated, how many times the performer has to change the fingering for the same multiphonics, and which note of the multiphonics should be maintained in the next one. What strikes me is how effectively the piece retains its idiosyncrasy and formal coherence in different performances.
Possible further explorations also include the organisation of longer periods of music retaining such a limited palette of material. I would argue that musical material approximately sustains itself for a certain amount of time, depending on various factors such as its inner features and the way the succession of events is arranged. Most of the pieces I wrote this year have a duration between ten and twenty minutes, except for *Breaking a Circle, Feeding Another* which lasts for about half an hour. Longer durations such as forty-five or sixty minutes can potentially foster a deeper immersion in the listening experience if the musical material is structured in a way that triggers a transformative listening approach. Investigating what can potentially stimulate this approach is at the core of my compositional activity and it keeps providing a fertile ground for ideas, reflections, and inspirations.

[25] Scott McLaughlin, unpublished score of *there are neither whole nor parts*, for clarinet or sax (2011)

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# List of works submitted in the portfolio:

***An Imperfect Circle 2*** (2019)
Bb clarinet, piano, violin, cello
Premiered by Ensemble Impronta at Zeneház Concerto, Budapest on the 10/08/2019
Recording submitted; performed by Ensemble Impronta

***Two Violins*** (2019)
Two violins
(recording unavailable)

***One Year time lapse*** (2019)
Piano
Recording submitted; rehearsed by Federico Pozzer (rehearsal)

***An Imperfect Circle*** (2018)
Violin
Premiered by Dejana Sekulic at St.Paul's hall, Huddersfield on the 7/03/2019
Recording submitted; performed by Dejana Sekulic

***Breaking a Circle, Feeding Another one*** (2018)
Piano
Recording submitted, the first three minute of it have small clips; rehearsed by Federico Pozzer

# Other works written during my Master study:

***Miniature for three triangles*** (2018)
Three triangles

***One Breath*** (2018)
Flute
Premiered by Kathryn Williams at SPREAD, York on the 25/02/2019
Performed by Kathryn Williams at Churchill College, University of Cambridge on the 7/06/2019

***Ingeminate*** (2018)

Oboe
Premiered by Christopher Redgate at St Paul's hall, Huddersfield on the 28/03/2019